INSECTS OF MICRONESIA
Coleoptera: Anobiidae[1]

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The 124 specimens studied in the preparation of this paper represent all of the Anobiidae known to have been collected in Micronesia. The collection contains nine species: six of these are considered endemic in Micronesia; the remaining three are recent introductions. The endemic species belong to the Dorcatomini and represent two genera, *Mirosternus* and *Caenocara*. The introduced species have been widely distributed by man and are not of special interest in Micronesia. *Lasioderma serricorne* (Fabricius) is cosmopolitan and belongs to the Xyletini. *Sitodrepa panicea* (Linnaeus) and *Nicobium castaneum* (Olivier) are cosmopolitan, or nearly so, and represent the Anobiini.

None of the endemic species have been found farther east in Micronesia than Kusaie, eastern Caroline Islands. The family is apparently absent from the Gilbert and Marshall Islands. Of the remaining principal island groups, only the Volcano Islands have failed to produce specimens of Anobiidae. This may be due to the paucity of vegetation (Gressitt, 1954, Insects of Micronesia, **1**: 44), although it is reasonable to expect endemic species to be found there since species were collected in the Bonin Islands to the north and the Mariana Islands to the south.

Mirosternus and *Caenocara* are well adapted and widespread in the Pacific. *Mirosternus* is known from the Seychelles, Hawaii, Samoa, and Fiji. *Caenocara* is a cosmopolitan genus. None of the species of *Caenocara* or *Mirosternus* are economically important. *Mirosternus* mines the twigs and branches of dead plants, while *Caenocara* feeds principally upon puff balls and bracket fungi.

Most of the specimens were collected by H. S. Dybas, J. L. Gressitt, A. R. Mead, J. F. G. Clarke, and to a lesser extent by O. H. Swezey, R. L. Usinger, J. W. Beardsley, N. L. H. Krauss, R. M. Bohart, T. Esaki, and P. A. Adams. I am indebted to J. L. Gressitt for systematic and editorial advice and to Dorothy Rainwater for the illustrations.

[1] This represents, in part, Results of Professor T. Esaki's Micronesian Expeditions (1936-1940), No. 92.

The United States Office of Naval Research, the Pacific Science Board (National Research Council), the National Science Foundation, and Bernice P. Bishop Museum have made this survey and the publication of the results possible. Field research was aided by a contract between the Office of Naval Research, Department of the Navy, and the National Academy of Sciences, NR 160-175.

The following symbols indicate the institutions in which specimens are stored: US (United States National Museum), BISHOP (Bernice P. Bishop Museum), KU (Kyushu University), BM (British Museum, Natural History), CAS (California Academy of Sciences), CM (Chicago Natural History Museum), HSPA (Hawaiian Sugar Planters' Association Experiment Station), and TT (Trust Territory).

Distributional List of Micronesian Anobiidae

	Micronesian Island Groups									Other Localities
			Carolines							
	Bonin	S. Mariana	Palau	Nomwin	Truk	Ponape	Kusaie	Wake	Marshall	
Anobiini										
1. Sitodrepa panicea		G*								Cosmopolitan
2. Nicobium castaneum	×									Southern U.S., Japan, Europe
Xyletini										
3. Lasioderma serricorne		×	×					×	×	Cosmopolitan
Dorcatomini										
4. Mirosternus gressitti		×	×	×		×				
5. M. boninensis	×									
6. M. guamensis		G								
7. Caenocara mariana		G								
8. C. clarkei			×		×		×			
9. C. dybasi			×							

* G instead of × indicates Guam only.

Key to Micronesian Tribes of Anobiidae

1. Metasternum grooved for reception of the middle legs .... **Dorcatomini**
   Metasternum not grooved for reception of the middle legs 2
2. Antenna with three-segmented club; elytra with prominent striae (*Sitodrepa panicea; Nicobium castaneum*) .... **Anobiini**
   Antenna without three-segmented club; elytra without prominent striae (*Lasioderma serricorne*) .... **Xyletini**

Tribe ANOBIINI

Genus **Sitodrepa** C. G. Thomson

Sitodrepa C. G. Thomson, 1863, Skand. Coleopt. **5**: 166.

1. **Sitodrepa panicea** (Linnaeus).
Dermestes paniceus Linnaeus, 1761, Fauna Suec., 145.
Sitodrepa panicea, C. G. Thomson, 1863, Skand. Coleopt. **5**: 166.—Peterson, 1957, Hawaiian Ent. Soc., Proc. **16** (2): 204.
DISTRIBUTION: Cosmopolitan.
S. MARIANA IS. GUAM: Recorded on stored vegetable products by Peterson.

2. **Nicobium castaneum** (Olivier).
Anobium castaneum Olivier, 1790, Entomologie 2 (16): 7.
Nicobium castaneum, LeConte, 1861, Smithsonian Misc. Coll. **3**: 204.
Synonyms: *Castaneum* var. *hirtum* Illiger, *fasciatum* Dufour, and *tomentosum* Mulsant and Rey.
DISTRIBUTION: Cosmopolitan; Bonin Is.
BONIN IS. CHICHI JIMA: June 1949, Omura; May 1930, Daito.

Tribe XYLETINI

Genus **Lasioderma** Stephens

Lasioderma Stephens, 1832, Illustr. Brit. Ent., Mandib. **5**: 417; 1839, Man. Brit. Coleopt., 198.
Pseudochina Jacquelin-Duval, 1860, Glanures Ent. **2**: 143; 1861, Gen. Coleopt. Eur., Cat. **3**: 220, 223.
Hypora Mulsant and Rey, 1864, Hist. Nat. Coleopt. France, Térédiles, **15**: 306.

3. **Lasioderma serricorne** (Fabricius).
Ptinus serricorne Fabricius, 1792, Ent. Syst. **1**: 241.
Lasioderma serricorne, Baudi, 1873, Berliner Ent. Zeitschr. **17**: 333.—Pic, 1912, Coleopt. Cat. **48**: 57.—Swezey, 1942, B. P. Bishop Mus., Bull. **172**: 163 (Guam).—Peterson, 1957, Hawaiian Ent. Soc., Proc. **16** (2): 204 (Guam).
Synonyms: *testaceum* Duftschmid, *rufescens* Stürm, and *breve* Wollaston.
DISTRIBUTION: Cosmopolitan; Guam, Palau.
PALAU. BABELTHUAP: Ulimang, six specimens, three in cigars, December 1947, Dybas.

Tribe DORCATOMINI

Key to Micronesian Genera of Dorcatomini

1. Body globose; eye acutely incised; elytron with two prominent lateral striae .... **Caenocara**
   Body elongate; eye not incised; elytron without prominent striae........ **Mirosternus**

Genus **Mirosternus** Sharp

Mirosternus Sharp, 1881, Ent. Soc. London, Trans. **1881**: 526.—Perkins, 1910, Fauna Hawaiiensis **3** (6): 614-642.—Scott, 1924, Ann. Mag. Nat. Hist. IX, **14**: 368.

Antenna 11-segmented, with apical three forming a distinct club; mesosternum invisible exteriorly; metathorax grooved for reception of middle legs, and produced in front so that front margin touches head when insect is in repose; first visible ventrite produced in middle forming a plate-like process between hind coxae; middle coxae widely separated.

Key to Micronesian Species of Mirosternus

1. Elytra with swirled pubescence; cuticle dark brown........ 2
   Elytra without swirled pubescence; cuticle black........ **boninensis**
2. Elytra with dark reddish pubescence, and with a large swirl at middle directed outward from suture........ **guamensis**
   Elytra with brassy pubescence and a large swirl similar to that of *guamensis*, but with an additional prominent swirl behind humerus with hair directed toward suture........ **gressitti**

4. **Mirosternus gressitti** Ford, n. sp. (fig. 1, *a, b*).

Male: Cuticle dark brown; dorsum almost uniformly punctate, and covered with a brassy pubescence except for patches of reddish brown pubescence on elytral declivities, a less conspicuous patch on pronotal disc, and another at base of elytron which tapers backward along suture to a point little past middle. Antenna somewhat paler in color than body; segment 1 ovate and larger than any other segment; segment 2 yellowish and roughly triangular, about one-fifth as large as first, and with two long setae extending outward from inner angle; segment 10 slightly shorter than segments 9 and 11 which are equal in length. Head with clothing similar to that of dorsum, and hair directed toward mouth; each eye about one-fourth as wide as distance between them; palpi testaceous; mandibles with prominent black carina on outer margin. Pronotum transverse; distance between acute front angles about three-fourths distance between obtuse hind angles; margins darker than disc. Elytra with pubescence mostly directed backward except for swirled areas which give a maculate impression depending upon direction of the light reflected therefrom. Metasternum with medial, longitudinal line deeply impressed posteriorly; punctures near middle larger and sparser than those on sides; anterior margin moderately produced forward. Abdomen with third and fourth visible ventrites equal in length at middle, but each shorter than second or fifth. Length: 2 mm.; breadth: 1 mm.

Female: Similar to male, but with eyes and antenna slightly smaller.

Paratypes: Thirty specimens measuring 1.8-2.2 mm. in length, and 0.8-1.1 mm. in breadth.

Holotype, male (US 63926), Ulebsehel (Auluptagel), Palau, Jan. 14, 1948, Dybas. Allotype, female (KU), Colonia, Ponape, Jan. 9, 1938, Esaki. Paratypes (BISHOP, US, CM, TT, HSPA): Amiangal, Peleliu, Palau, Dec. 23,

1952, Gressitt; wooded peak SW of Ulimang, Babelthuap, Dec. 20, 1947, Dybas; Nomwin, Nomwin A., Feb. 17, 1954, Beardsley; Koror, Palau, Feb. 7, 1954, Beardsley, and Jan. 15, 1948, Dybas; Ulebsehel (Auluptagel), Palau, Sept. 1952, Krauss; Ngeremeyaos (Ngiramaous), Palau, Nov. 16, 1947, Dybas; Ngurukdabel (Urukthapel), Palau, 180 m., Dec. 5, 1952, Gressitt; east coast, Peleliu, Palau, Aug. 4, 1945, in copula, Dybas; Papako (Papago) area, Saipan, May 7, 1945, Dybas; Mt. Tagpochau, Saipan, 1250 ft., Feb. 18, 1945, Dybas; Halaihai-as-Teo area, Saipan, Feb. 4, 1945, beating vegetation, Dybas; Ngariungs, Ngaiangl (Kayangel) A., Palau, August 25, 1956, B. McDaniel.

DISTRIBUTION: S. Mariana and Caroline Is.

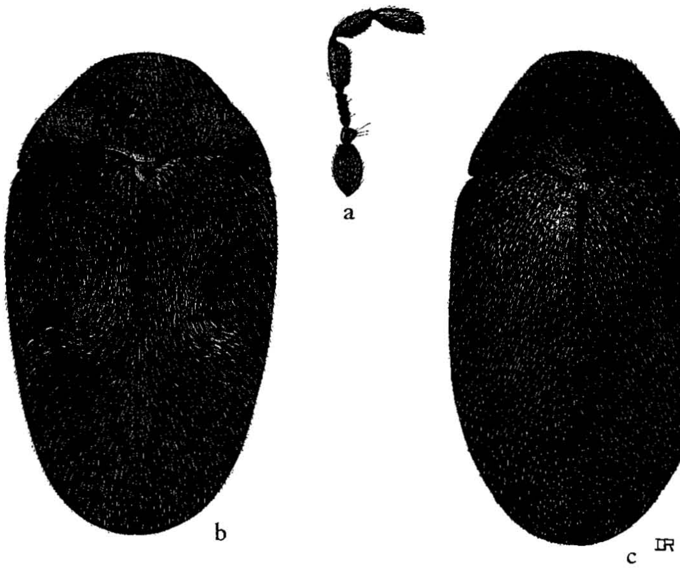


FIGURE 1.—**a,** *Mirosternus gressitti,* antenna; **b,** *Mirosternus gressitti,* dorsal view, excluding head and legs; **c,** *Mirosternus boninensis,* dorsal view, excluding head and legs.

This species is similar to *M. guamensis* (Blair), but differs in having the pubescence swirled in many directions and reflecting a brassy luster which gives the insect an ornate appearance, whereas *guamensis* has the pubescence dusky in color and less swirled. *M. gressitti* Ford and the following two species of *Mirosternus* differ, in general, from the Hawaiian *Mirosternus* (73 species) in being smaller and more pubescent. Also, the Hawaiian species have the metasternum more swollen, and the medial longitudinal line more deeply impressed, and exhibit more extreme sexual differences, especially in the size of the eyes and antenna.

5. Mirosternus boninensis Ford, n. sp. (fig. 1, *c*).

Male: Elongate, black, with elytral pubescence uniformly directed backward; dorsum evenly punctured. Antenna small, though not especially short in length; segments 2 to 8 and base of segment 9 yellow; club dark brown; segment 9 slightly wider than 10 and 11; segment 10 about two-thirds as long as 9 and 11. Head densely and finely punctured; pubescence directed toward center of the epicranium; mandible tridentate with outer two teeth prominent and inner one minute. Pronotum with pubescence tangential; hind two-thirds of disc with hairs directed toward middle; front third of disc with hairs directed forward, and at hind angles hairs directed obliquely toward lateral margin; front angles with hairs directed upward toward middle of disc. Elytron rather elongate with lateral margin inflected just below humerus creating a raised area resembling humerus. Metasternum with longitudinal, medial line impressed in front between middle coxae, and ending behind in small pit followed by two more pits placed side by side. Abdomen finely punctured; fourth visible ventrite shorter in length at middle than any other ventrite, and with hind margin arcuate at middle; hind intercoxal process on first ventrite with sides diverging inward posteriorly. Length: 2.2 mm.; breadth: 1 mm.

Female: Antennal club obviously smaller than in male; segments 9 to 11 about equal in length.

Paratypes: Thirteen specimens measuring 1.8-2.2 mm. in length and 0.9-1.0 mm. in breadth.

Holotype, male (US 63927), Chichi Jima, Bonin, in hills, June 18, 1949, Mead. Allotype, female (BISHOP 2702), Haha Jima, Bonin, July 2, 1949, Mead. Paratypes (BISHOP, CAS, CM, US): Chichi Jima, Bonin, July 10, 1951, R. Bohart.

DISTRIBUTION: Bonin Is.

This species is distinct from *M. guamensis* (Blair) and *M. gressitti* Ford in having the elytral pubescence uniformly directed backward and the integument black. *M. gressitti* and *M. guamensis* have the elytral pubescence swirled and the integument brown.

6. Mirosternus guamensis (Blair), n. comb.

Dorcatomiella guamensis Blair, 1942, Insects of Guam, B. P. Bishop Mus., Bull. **172**: 60.

The genus *Dorcatomiella* was originally proposed for a Marquesan and Tahitian species (Blair, 1935, Marquesan Insects II, B. P. Bishop Mus., Bull. **114**: 292) which is very closely allied to *Mirosternus.* Following Blair's generic description of *Dorcatomiella,* he compares it with *Mirosternus,* in part, as follows: ". . . *Mirosternus* also has a characteristic elevated plate on the middle of the first abdominal segment." I have examined the holotypes of *Dorcatomiella guamensis* and the Tahitian species *D. sericeovariegata* Blair, and find that *D. guamensis* has the characteristic elevated plate on the first abdominal segment, but *D. sericeovariegata* does not. The holotype of *D. guamensis* was mounted so that much of the underside was obscured. In Blair's description of *D. guamensis,* this character is not mentioned. Furthermore, I can not discover any other generic character that would adequately separate *Dorcatomiella* from *Mirosternus.*

DISTRIBUTION: Mariana Is.

S. MARIANA IS. GUAM: Barrigada, Inarajan, Mt. Chachao, 1936, Swezey and Usinger (BISHOP, HSPA); Inarajan, 1952, Krauss (US).

Genus **Caenocara** Thomson

Caenocara C. G. Thomson, 1860, Skand. Coleopt. **1**: 90.

Tylistus LeConte, 1865, Acad. Nat. Sci. Philadelphia, Proc. **1865**: 222.

Enneatoma Mulsant and Rey, 1864, Hist. Nat. Coleopt. France, Térédiles, **15**: 328, 367.

Antenna nine-segmented, with a large club formed by outer three segments; eyes deeply and acutely indented; body globose; elytron with two prominent lateral striae; metasternum produced forward between middle coxae, and grooved at sides for reception of middle legs.

KEY TO MICRONESIAN SPECIES OF CAENOCARA

1. Elytron with outer marginal stria obviously longer than inner marginal stria .... **clarkei**
   Elytron with inner and outer marginal striae about equal in length........ 2
2. Elytra with whitish, recumbent, swirled pubescence........ **mariana**
   Elytra with semi-erect, yellowish, unswirled pubescence; each hair appearing to be directed differently than the hairs immediately next to it........ **dybasi**

7. **Caenocara mariana** Ford, n. sp.

Male: Small, black, strongly punctate, with whitish tangential pubescence. Antenna castaneus; segment 2 subtriangular, swollen, and larger than segments 3 to 6; segment 7 as long as segments 2 to 6 combined, and with inner angle strongly acute (about 24 degrees); segment 8 slightly longer than 7, narrow basally, but two-thirds as wide as 7 apically; segment 9 filiform and longer than any other segment. Head with clothing similar to that of pronotum; eyes prominent, nearly as wide as distance between them, acutely incised somewhat more than a third of diameter of an eye; clypeal suture strongly impressed. Pronotum with acute front angles strongly bent downward and inward so that distance between them is but two-thirds distance between obtuse hind angles; side and front margins carinate at front angles. Elytron with two prominent outer striae extending to apex, and a third inner stria, shallowly impressed, extending from base halfway to apex; with two rows of large, shallow, serial punctures near suture extending from a point just behind scutellum halfway to apex; pubescence tangential so that elytra appear to have two or three longitudinal white stripes depending upon direction of light reflected therefrom. Metasternum strongly and deeply punctate at middle; with a medial line on hind two-thirds beginning at front with a large pit followed immediately by two more large pits placed side by side. Abdomen with pubescence and punctures finer and sparser than on notum; first visible ventrite with a small medial process between hind coxae; third and fourth visible ventrites equal in length at middle and each half as long as second. Length: 1.8 mm.; breadth: 1.4 mm.

Holotype, male (CM), Pati Point, Guam, June 4, 1945, Dybas. Paratype: One male similar to holotype, Pt. Ritidian, Guam, May 29, 1945, beating vegetation, Dybas.

DISTRIBUTION: Guam.

This species resembles *Caenocara clarkei* Ford, but the pubescence is entirely silvery without any golden swirls. *C. mariana* Ford and the following

two species are quite distinct from the continental species. In general the insular species are smaller, more pubescent, not so prominently punctured, and the eyes are not incised to or beyond the middle.

8. Caenocara clarkei Ford, n. sp. (fig. 2, *a, b*).

Male: Dark brown, medium size, dorsum covered with tangential, golden pubescence. Antenna large; segment 7 nearly as wide as 9 is long; segment 8 longer than 7, but slightly shorter than 9. Head with eye indented about one-third its diameter; eyes half as wide as distance between them; maxillary palpus testaceous with apical segment nearly equilaterally triangular, and outer margin feebly arcuate, front margin truncate. Pronotum sharply bent downward and inward at acute front angles; side and front margins with cuticle nearly black; hind margin curved outward at middle; pubescence mostly directed forward except for a small swirl on center of disc immediately in front of hind margin. Elytron with bright golden, greatly swirled pubescence which produces maculae variously disposed according to direction of hairs and light reflected therefrom; with two prominent, impunctate, marginal striae, and a third obscure, inner stria extending from humerus one-third the distance to apex; inner marginal stria extending to declivity but obviously shorter than outer marginal stria. Metasternum with large, deep punctures at middle, and sides feebly punctured. Abdomen with heavily chitinized hind margin of first visible ventrite curved inward on each side and produced forward at middle to form a knob-like process between hind coxae; fifth visible ventrite as long as third and fourth combined at middle. Length: not including the head, 2 mm.; breadth: 1.6 mm.

Female: Antenna smaller, with segments not so strongly produced inward as in male.

Holotype, male (US 63928), Pukusrik, Kusaie, 1 m., in bracket fungus, Feb. 28, 1953, Clarke. Allotype, female (BISHOP 2703), Koror, Palau, sweeping, March 11, 1954, Beardsley. Paratypes, 22 specimens (US, BISHOP,

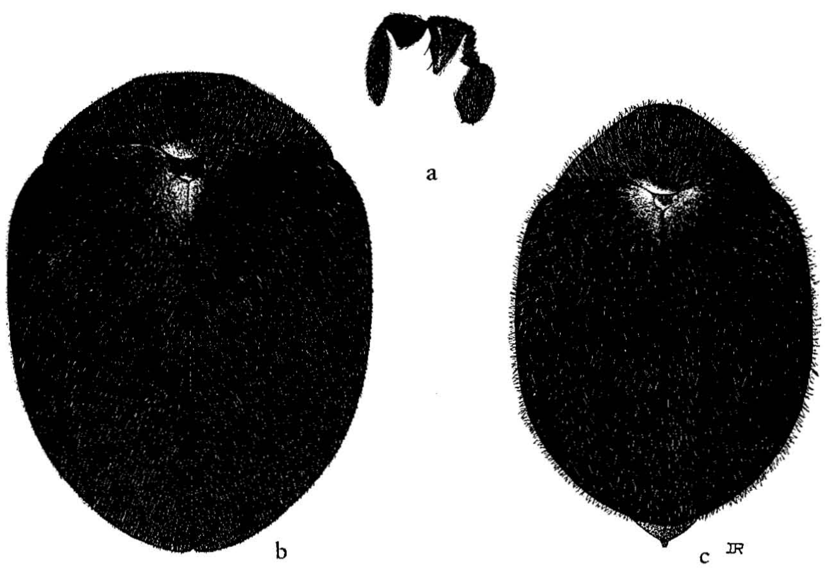


FIGURE 2.—**a**, *Caenocara clarkei*, antenna; **b**, *Cacnocara clarkei*, dorsal view, excluding head and legs; **c**, *Caenocara dybasi*, dorsal view, excluding head and legs.

BM, CM, KU): Mt. Unibot, Ton (Tol) Islet, Truk, light trap in native forest, 390 m., Dec. 31, 1952, Gressitt; Pata, Truk, April 9, 1940, Yasumatsu and Yoshimura.

DISTRIBUTION: Caroline Is.

Nineteen specimens of this series were taken from bracket fungus by Clarke on Kusaie in a teneral condition. These specimens were preserved in alcohol, which may have altered the color of the pubescence to whitish instead of the true bright golden luster found on the specimens that were preserved dry. The true color of the integument is black. *C. clarkei* Ford resembles a Fijian species (to be described) more than any other Pacific *Caenocara,* but it differs in the color and direction of the dorsal hairs as well as other less obvious characters. In Micronesia *C. clarkei* resembles *C. mariana* Ford more than *C. dybasi* Ford.

9. Caenocara dybasi Ford, n. sp. (fig. 2, *c*).

Male: Small, dark brown, covered with pale golden, semi-erect pubescence. Antenna with very large club; segment 7 nearly twice as wide and little more than half as long as segment 8; segment 9 longer than 7 or 8. Head sparsely setose, with eyes incised almost to middle, and half as wide as distance between them. Pronotum moderately and evenly punctate; pubescence directed forward in middle and downward at sides. Elytra clothed similarly to pronotum, but hairs arranged in obscure rows alternately directed toward and away from suture giving a criss-cross effect. Metasternum strongly, evenly, and deeply punctate, with a narrow, smooth, unindented medial line. Abdomen with third visible ventrite slightly shorter in length at middle than fourth; moderately punctate, but not so deeply impressed as on metasternum. Length (not including head): 1.3 mm.; breadth: 1 mm.

Female: Antenna obviously smaller than that of male.

Holotype, male (CM), Ngergoi (Garakayo) I., Palau, Aug. 8, 1945, Dybas. Allotype, female (US), Limestone Ridge north of inlet, Koror, Palau, Jan. 16, 1948, Dybas. Paratypes, eight specimens measuring 1.5-1.9 mm. in length (CM, BISHOP): Koror, sweeping, March 1954, Beardsley.

DISTRIBUTION: Western Caroline Is.

This species differs from the other two Micronesian species of *Caenocara* in having the pubescence arranged in rows with the hairs semi-erect, instead of in recumbent swirls. The antennal club of the male is comparatively larger in proportion to the body than that of *C. clarkei* Ford or *C. mariana* Ford.